

CONDOR

INSTRUMENTS

ACTTRUST USER MANUAL



Condor Instruments Ltda.

01/01/2015

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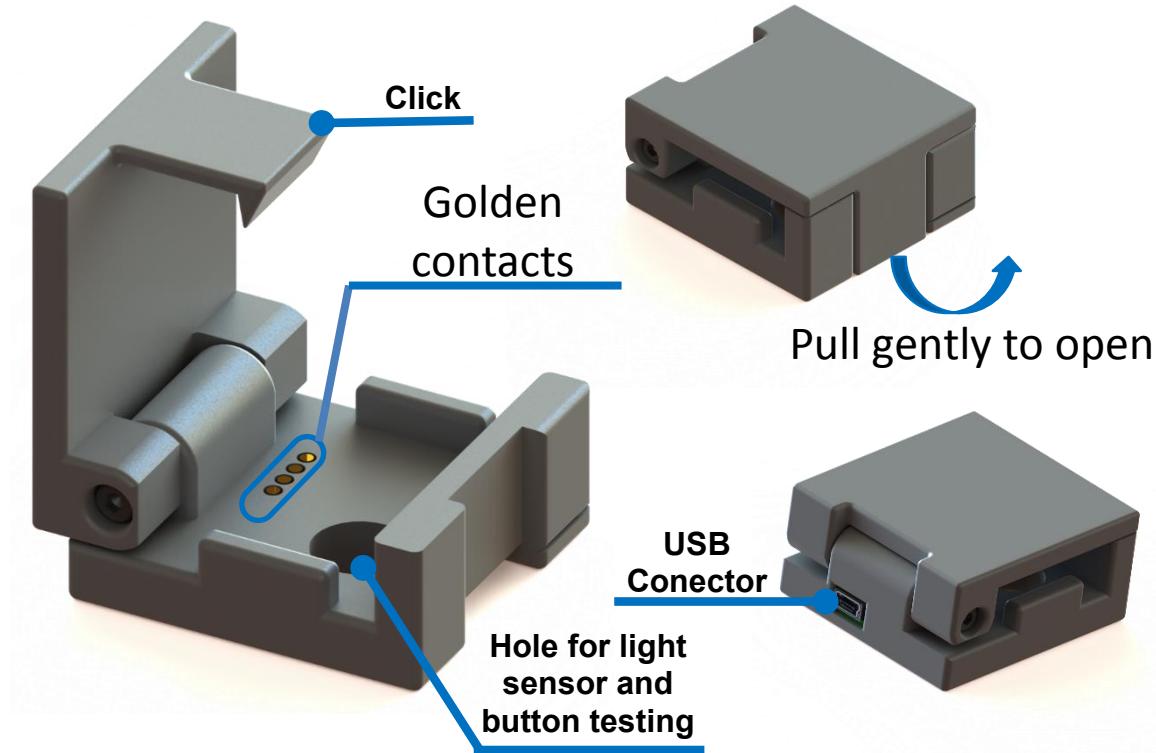
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ActDock

Description



Cleaning and Maintenance

- Only clean using a damp cloth and mild soap.

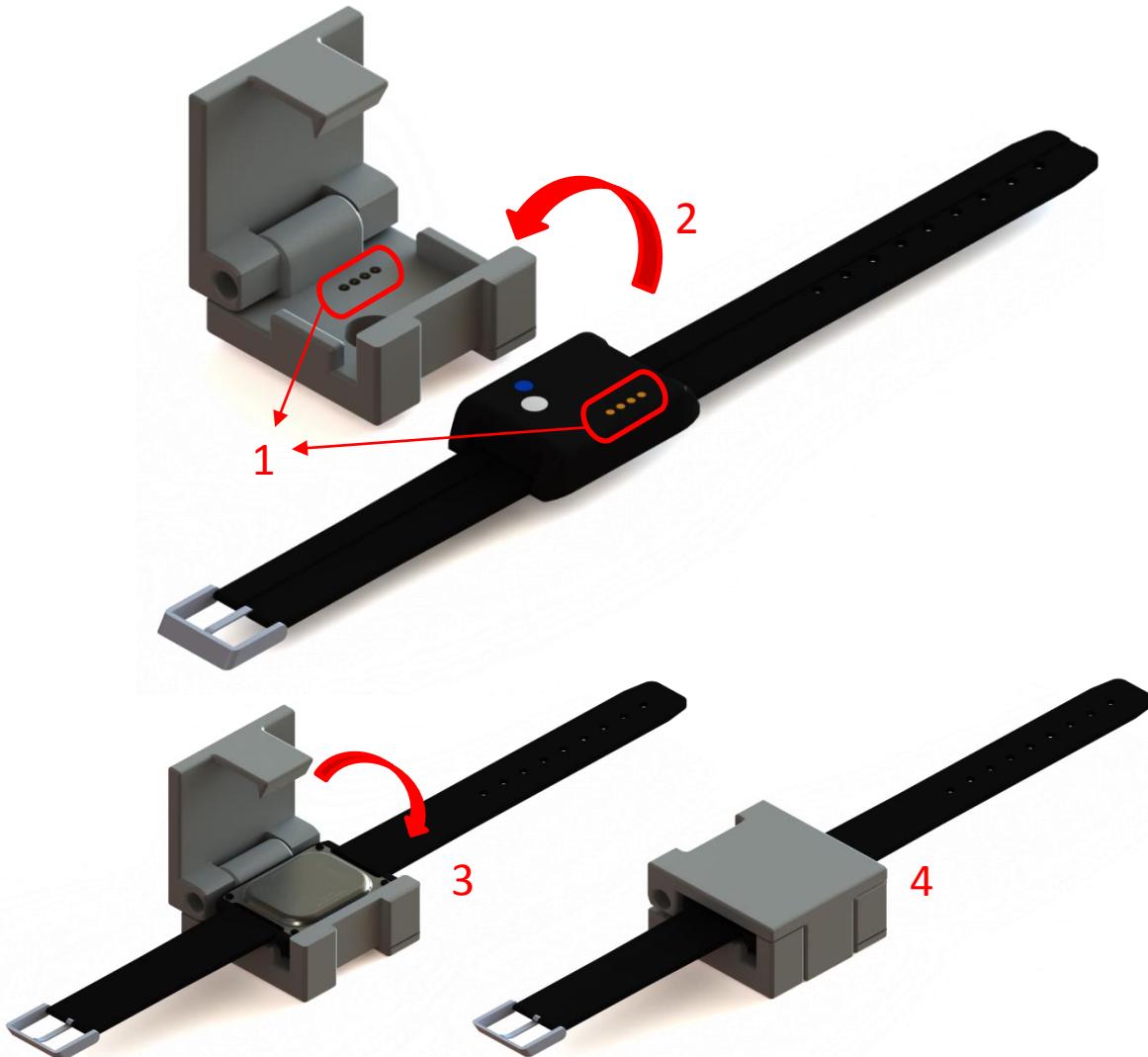
Notes:

- Avoid contact with gasoline, benzine, thinner or acetone and, in case of contact with any of these substances, clean the device using a damp cloth and mild soap as soon as possible.
- Do not use abrasive cleaning components or highly alkaline (e.g., saponaceous or ammonia-based cleaners).
- Do not use Isopropanol or Butyl Cellulose in any surface of the dock.

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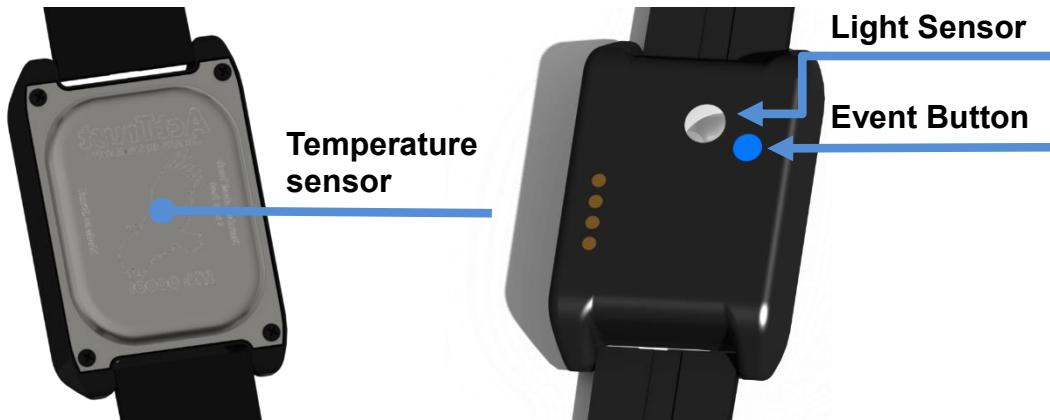
Using the ActDock



1. Guarantee that the golden pins in both the dock and in the ActTrust are aligned as shown.
2. Rotate de ActTrust in order to dovetail it in dock.
3. Close the dock and pressure it until the click locks.

ActTrust

Description



Cleaning and Maintenance

- Wash only with warm water and mild soap.
- Always wash the device when it got into contact with salt water.
- Whenever the ActTrust is going to be stored, put the same into power down mode.
- Do not leave the ActTrust with the battery fully discharged for long periods. This may reduce the lifetime of the internal battery.
- If the ActTrust is stored for long periods, perform a full charge of the battery every 6 months.

Notes:

- Avoid contact with gasoline, benzine, thinner or acetone and, in case of contact with any of these substances, wash the device with mild soap and water as soon as possible.
- Do not use abrasive cleaning components or highly alkaline (e.g., saponaceous or ammonia-based cleaners).
- Do not use Isopropanol or Butyl Cellulose in the protective surface of the ActTrust.
- Do not swim or dive with ActTrust.

ActStudio Software

The ActStudio Software is used to extract and export data from the ActTrust. It is composed by 3 menus, described below.

Installation

This software does not require any installation. It can be run from a pen drive or any other external devise or from the computer it self.

To run the software just unzip the software file on the desired folder and the run the EXE file.

Control Menu



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INFORMATION	
Device	Name of the connected device
Hardware Version	Hardware version of the connected device.
BATTERY	Charge status of the battery of the connected device and its power. CHARGING CHARGED
Firmware Version	Firmware version of the connected device.
ID	Unique identifier of the connected device.
Power Mode	Active or Power down
Memory	Percentage of the battery used

POWER DOWN	
Label	Identifies whether the device is set to power down (storage mode) when disconnected from the dock. ENABLED: Device will enter in power down mode when you disconnect it from the dock. DISABLED: Device will enter in standard operation mode when you disconnect it from the dock.
Power Down Button	Sets the connected device to enter power down mode when disconnected from the dock.
Active Button	Sets the connected device to not enter power down mode when disconnected from the dock.

SENSORS	
ACCELEROMETER	Instantaneous sampled value of the internal accelerometer.
TEMPERATURE	Instantaneous sampled value of the internal temperature sensor (in ° C).
LIGHT	Instantaneous sampled value of the internal light meter.

TIME	
System	Date and Time of your computer.
Device	Date and Time of the connected device.
Sync Time Button	Synchronizes the time of the device connected to the computer's time.

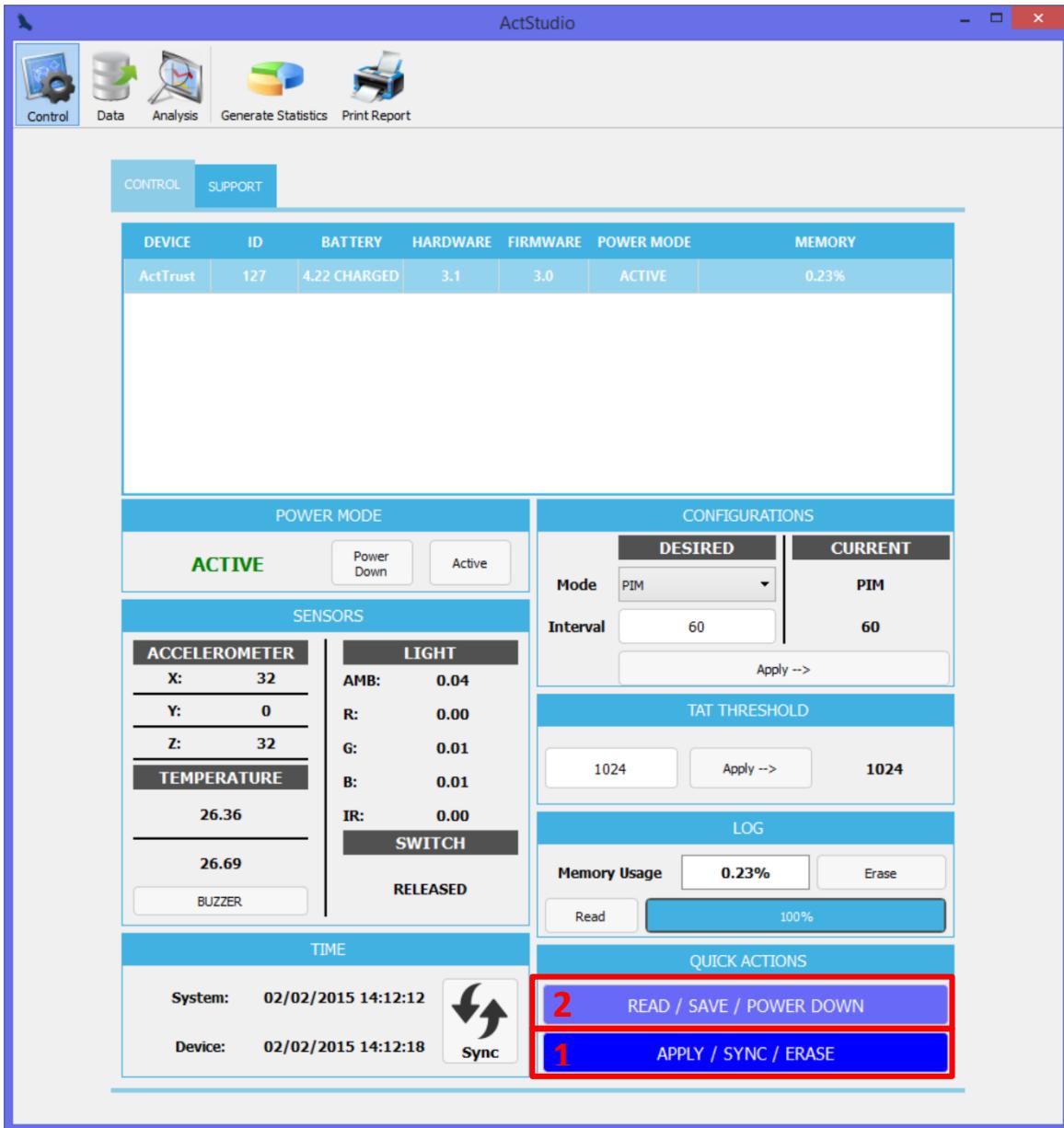
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CONFIGURATIONS	
DESIRED	Desired settings of the connected device.
CURRENT	Current settings of the connected device.
Mode	<p>Activity sampling mode:</p> <p>TRIAXIAL: Vector composition of the three axes. UNIAXIAL: Each axis is calculated independently (not available)</p> <p>PIM: Proportional Integral Mode TAT: Time Above Threshold ZCM: Zero Crossing Mode</p>
Interval	Sampling interval (in seconds between 1 and 86400).
APPLY Button	Apply the desired settings at the connected device.

LOG	
Memory Usage	Memory usage of the connected device.
ERASE Button	Clears the data stored in the memory of the connected device.
READ Button	Read the data stored in the memory of the connected device.

Quick Operations Buttons



There are 2 buttons in the **Control** Menu that do not add any new functionality to the ActStudio software, but rather makes operations with the ActStudio software quicker. They are basically scripts that automate a series of operations implemented by other controls.

1. **APPLY / SYNC / ERASE**: performs the same operation as if the user had pressed the buttons **APPLY** (in the **CONFIGURATIONS** section), **Sync Time** (in the **TIME** section) and **ERASE** (in the **LOG** section) sequentially.

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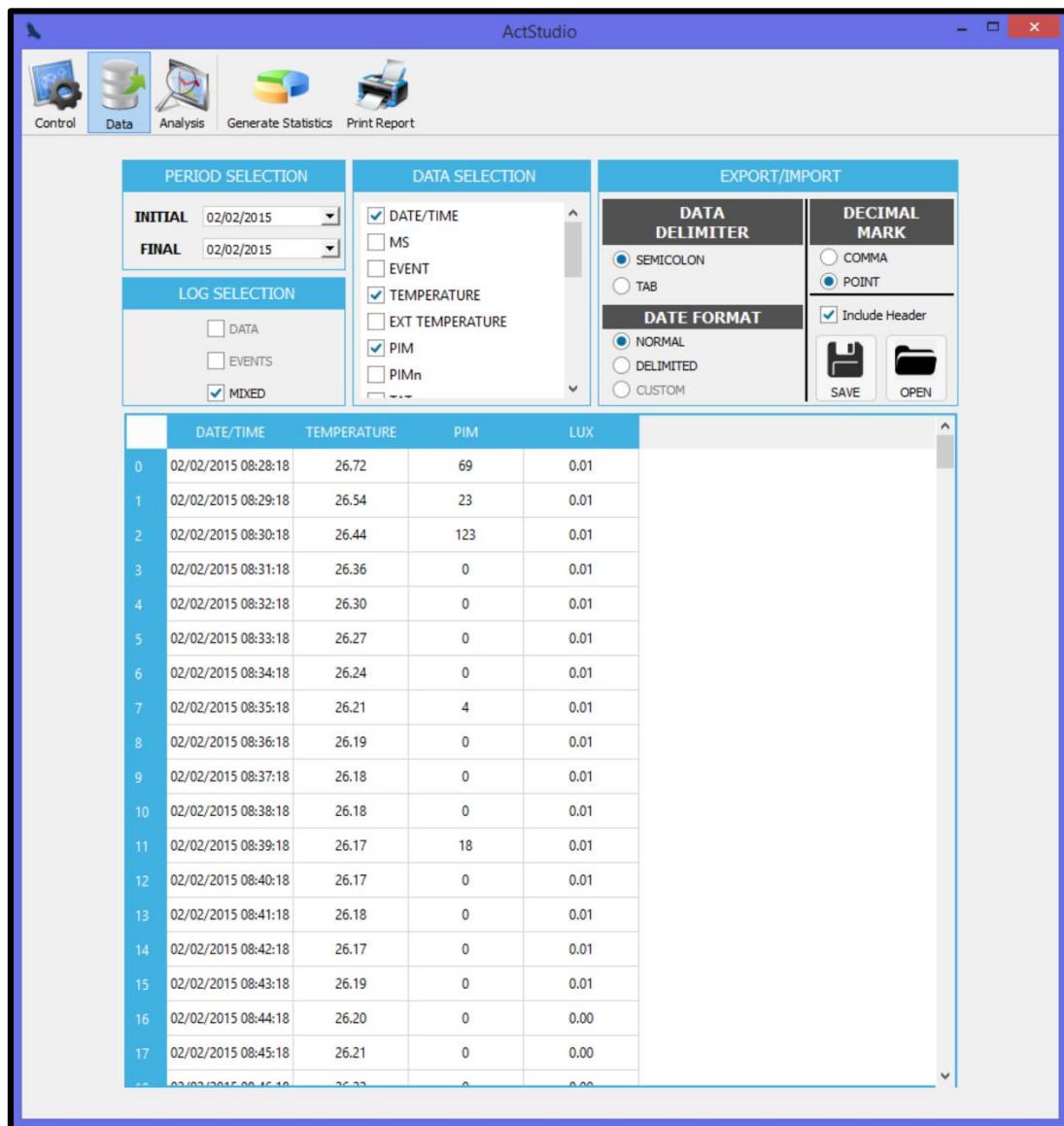
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2. **READ / SAVE / POWER DOWN:** performs the same operation as if the user had pressed the buttons **READ** (in the **LOG** section), **SAVE** (in the **LOG** section) and **ENABLE** (in the **POWER DOWN** section) sequentially.

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Data Menu



PERIOD SELECTION

Field used to select the period of the data to be exported.

INITIAL	Start date
FINAL	Final date

LOG SELECTION

Field used to select types of log exported

EVENTS	Event logs (e.g. button press)
DATA	Data logs (activity, temperature and light).
MIXED	Just data logs (DATA) will be exported, but will be informed if there was some event during the Data log period.

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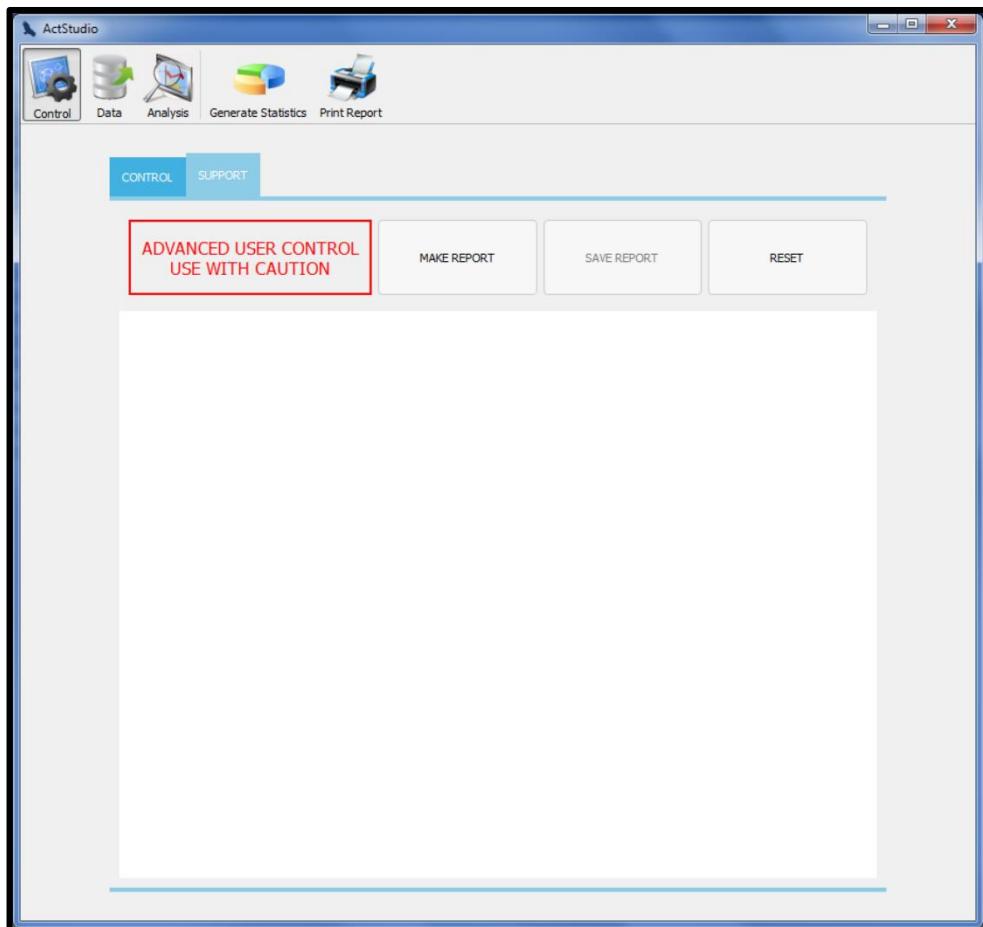
DATA SELECTION	
Field used to select which data types to be exported	
DATE/TIME	Date and time of the log.
MS	Milliseconds value of the log.
EVENT	Normal Mode: Indicates whether the log is an event. Mixed Mode: Indicates whether there was an event during this log period.
TEMPERATURE	Value of the temperature (in ° C).
PIM	Activity value calculated in Proportional Integral Mode
PIMn	Value of the PIM normalized per second.
TAT	Activity value calculated in Time Above Threshold mode.
TATn	Value of the TAT normalized per second.
ZCM	Activity value calculated in Zero Crossing Mode
ZCMn	Value of the ZCM normalized per second.
LIGHT	Value of light intensity (in Lux).

EXPORT/IMPORT	
DATA DELIMITER	Character used to delimit data when exported. TAB SEMICOLON(;)
DECIMAL MARK	Character used as decimal mark when exported. COMMA(,) Point(.)
DATE FORMAT	Date and Time field formatting when exported. NORMAL: Date and time delimited by a space. DELIMITED: Date and time delimited by the delimiter character (DATA DELIMITER) chosen. CUSTOM: Date and time in the format HHMM.
Include Header	Selects whether to include a header in the exported data.
Save Button	Saves the extracted data with the desired settings.
Open Button	Open data from old logs(the data must have the header).

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Support Menu



CONTROLES

MAKE REPORT Button	Generates a report with relevant information about the connected device.
SAVE REPORT Button	Save the report generated with the MAKE REPORT button.
RESET Button	Resets the connected device.

Configuring ActTrust for an Operation



1. Choose the sampling mode and the sampling interval in the **CONFIGURATIONS** field. Click the **APPLY** button.
2. It is recommended to delete all data on the device used before starting a new sampling to maintain data consistency. In order to do so, click the **ERASE** button in the **LOG** field. A window asking if you really want to delete the data from the device will appear. Click **YES**.
3. It is advisable to synchronize the device time with the time of the user's computer in order to reduce any accumulated drift. To do this, click in the **SYNC** button on the **TIME** field.

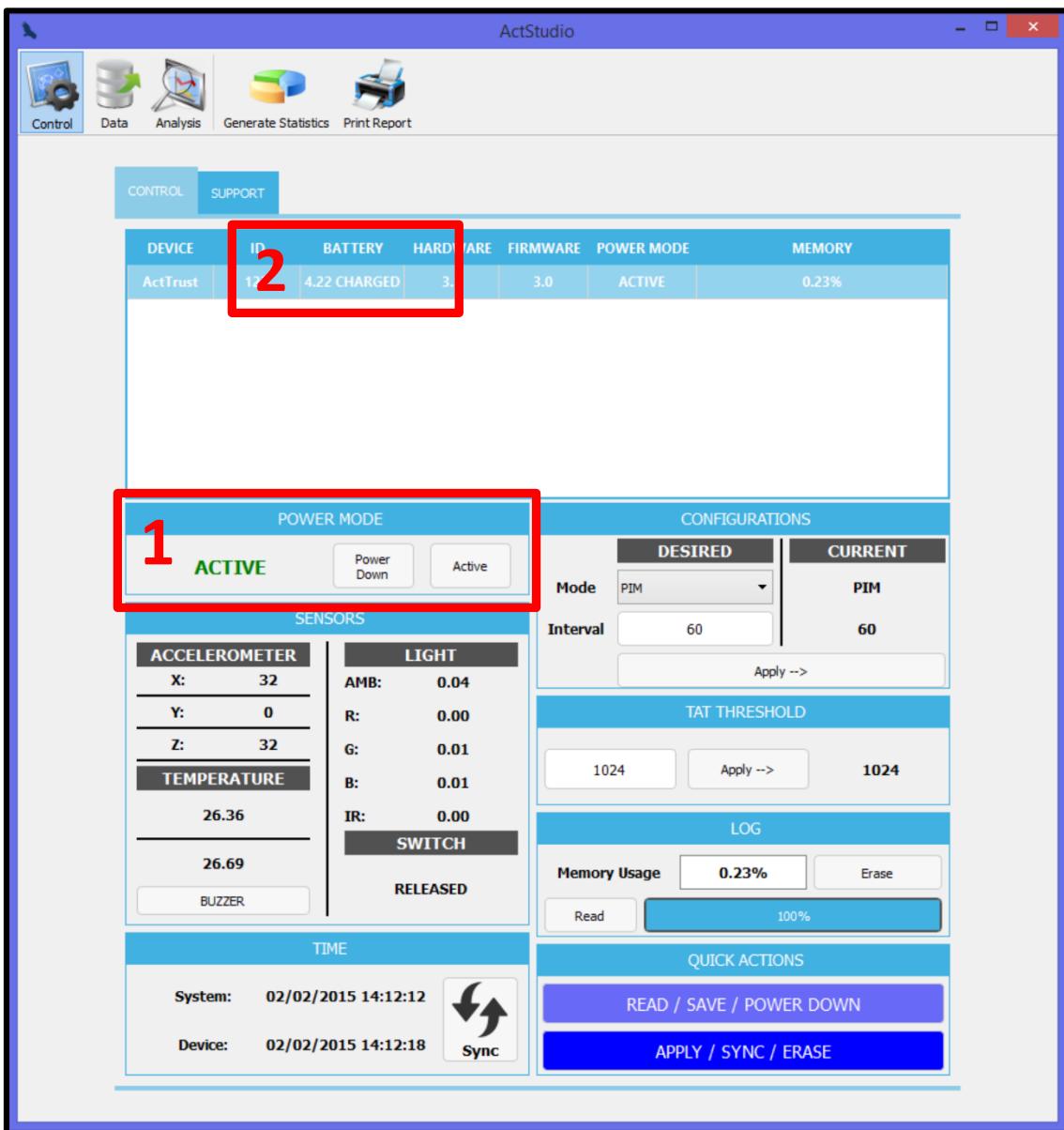
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4. It is advisable to wait until the device's battery is fully charged to ensure the operating time specified. To monitor the state of the battery charge, check the **BATTERY** field. When the battery is fully charged, it will be indicated as **CHARGED**.
5. With all the desired settings done, the device can be removed from the dock and it will be already in operation.

REMARKS: After performing the steps 1 – 4 once, the configuration process can be performed by using the **APPLY / SYNC / ERASE** Button.

Putting ActTrust Into Power Down Mode



1. In **POWER DOWN** field, click in the Power Down button. Make sure the field show's **POWER DOWN**.
2. It is recommended to wait until the ActTrust's battery is fully charged before putting it in storage mode. To monitor the state of the battery charge, check the **BATTERY** field. When the battery is fully charged, it will be indicated as **CHARGED**.

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3. Just remove the ActTrust from the dock and it will already be in storage mode. In case it is reconnected to the dock, it will automatically come into the datalogger mode. If you want to check the device actually is in storage mode, press the event button a few seconds after it is removed from the dock. The buzzer should not beep when pressing the button. If the buzzer beeps, repeat the steps described above again.

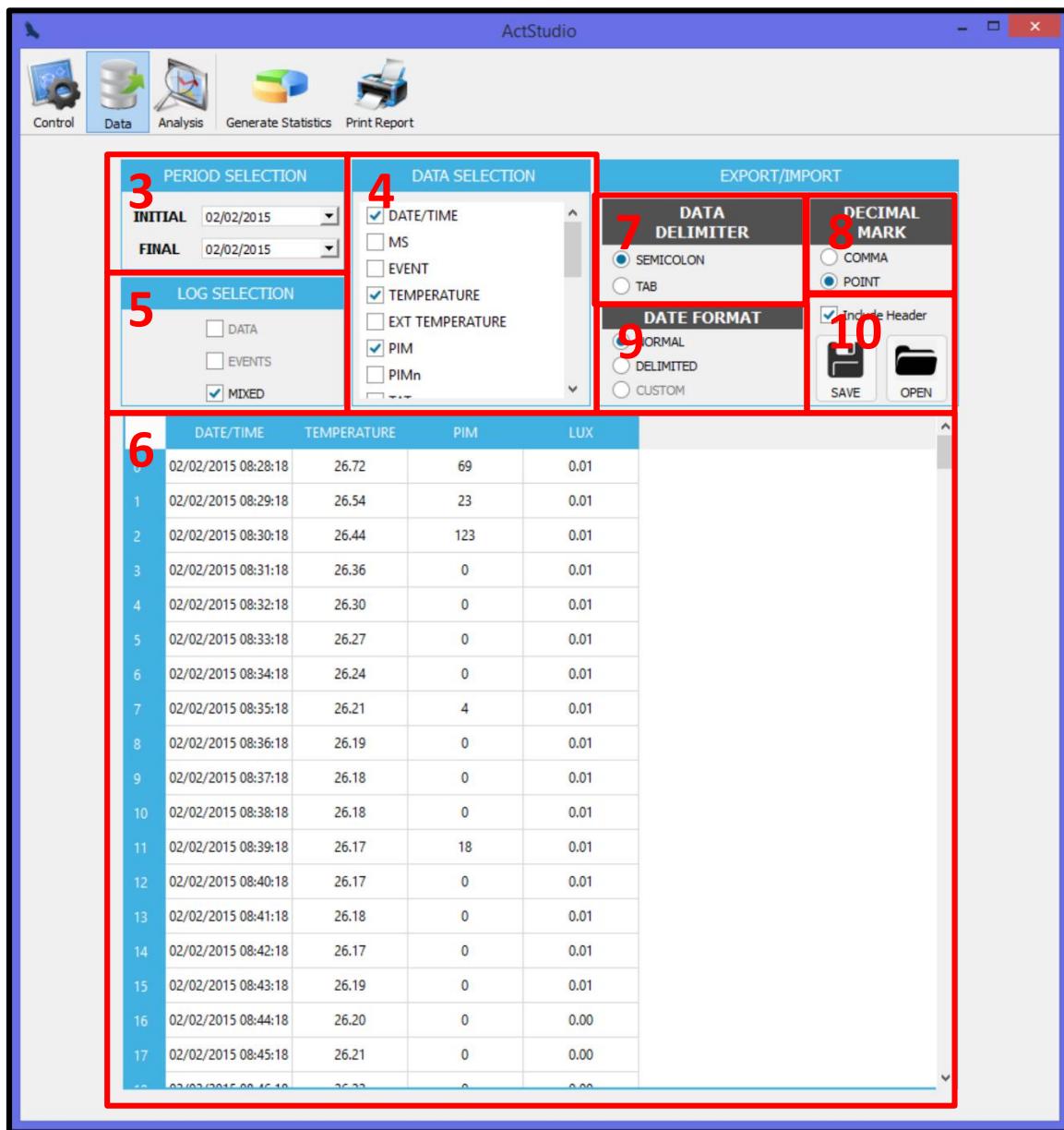
Extracting ActTrust Data



1. Click the **READ** button in the **LOG** field. Wait for the reading to be performed. The software will freeze while reading.
2. Navigate to the **DATA** menu.

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3. Select the period of the data to be exported in **PERIOD SELECTION** field
4. Select the data to be exported in the **DATA SELECTION** field.
5. Select the types of log to be included in the exported file in the **LOG SELECTION** field.
6. The exported data can be seen in **Table** tab.
7. In the **DATE DELIMITER** field, select which character will be used as the data delimiter.

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8. In the **DECIMAL MARK** field, select which character will be used as decimal separator.
9. In the **DATE FORMAT** field, select which format will be used for the date and time of exported logs.
10. Select **INCLUDE HEADER** if you want to include a header in the exported data. Press the Save button and select where the data will be saved and the file name.

REMARKS: After performing the steps 2 – 11 once, the data extraction process can be performed by using the **READ / SAVE /POWER DOWN** Button with the additional effect of enabling the power down mode of the device.

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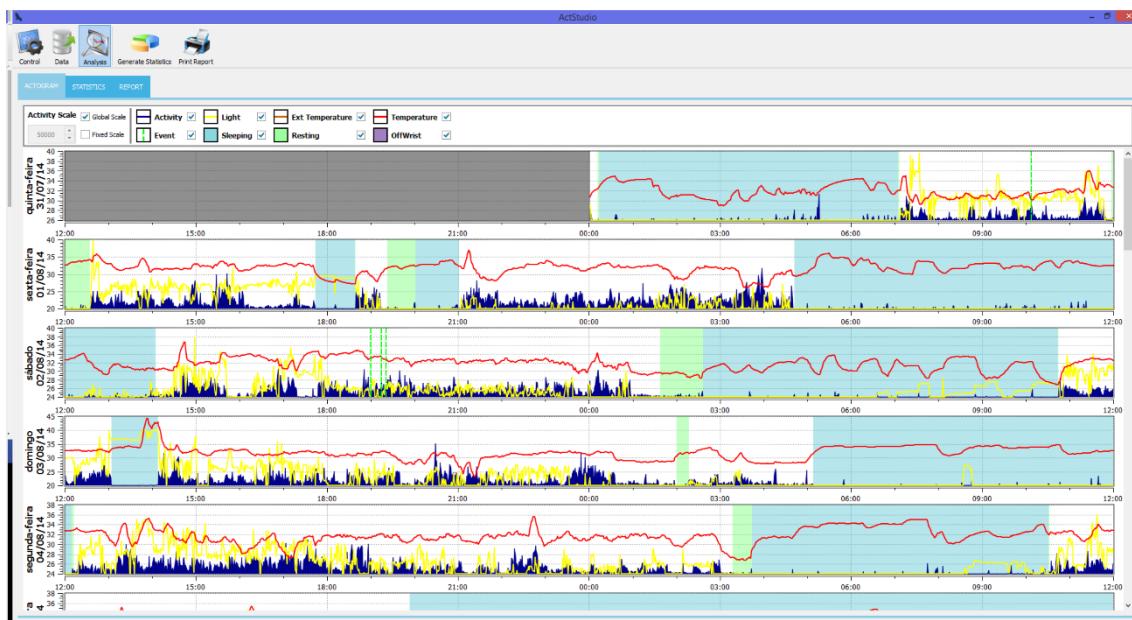
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Data Analisys

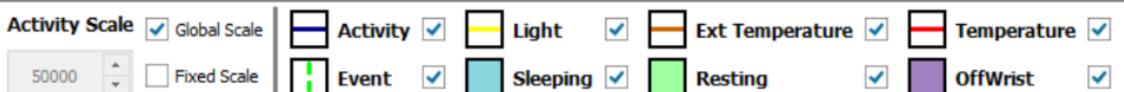
On this menu the data extracted in the previous steps can be analised and additional information can be attached

Actogram

An actogram can be plotted and edited for publishing it on the report



Plot Setup



On the top of the window there is a configuration menu it has the following options and configurations

Plot Setup	
Activity Scale	Sets the scale that will be used to display activity data. Global Scale – Same scale used to all plots Fixed scale – Use the scale set manually by the user
Activity	Select if Activity data will or will not be shown in the graphs
Event	Select if Event data will or will not be shown in the graphs
Light	Select if Light data will or will not be shown in the graphs
Sleeping	Select if computer calculated Sleeping time will or will not be shown in the graphs

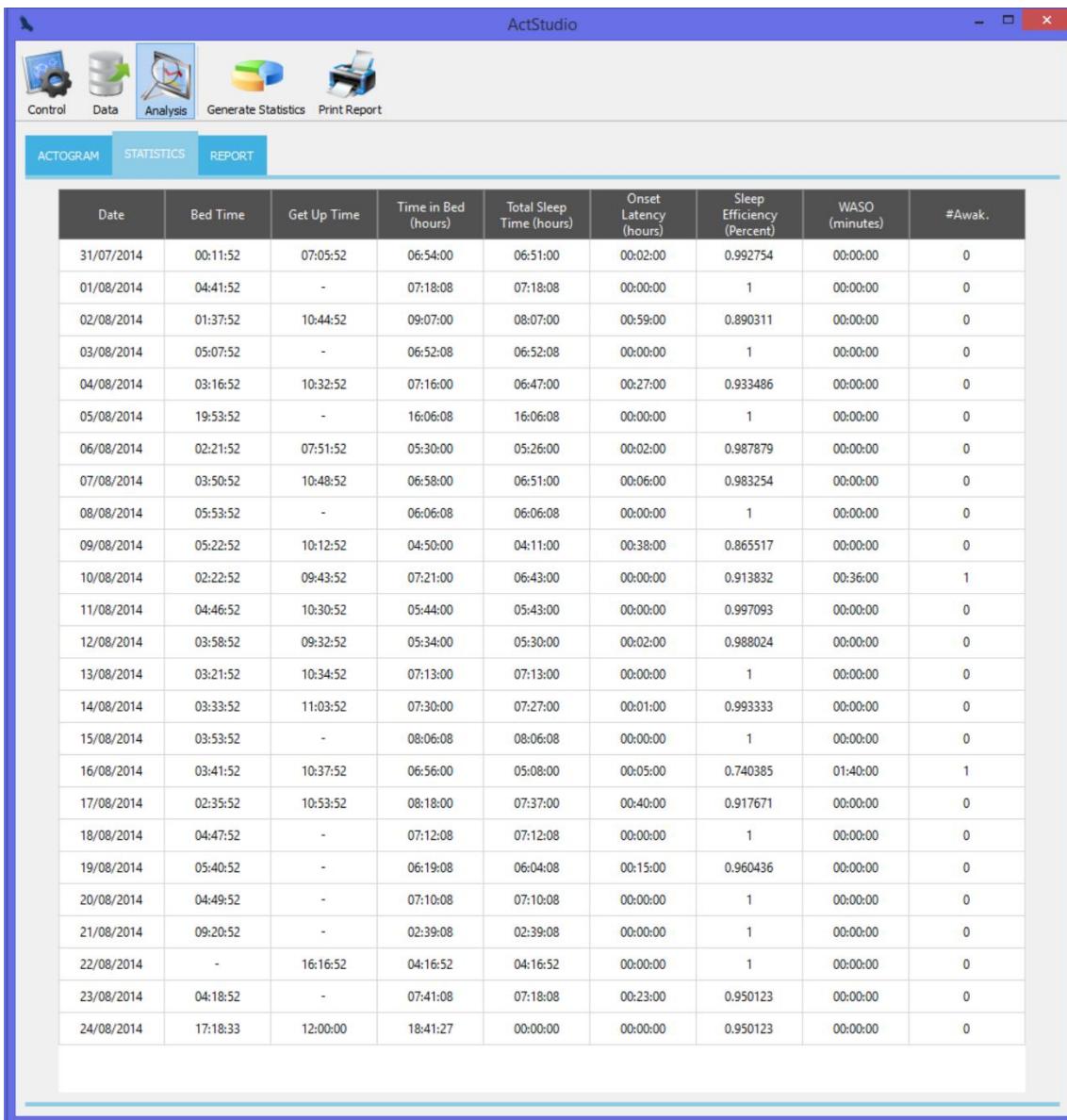
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Ext Temperature	Select if External Temperature data will or will not be shown in the graphs
Resting	Select if computer calculated Resting time will or will not be shown in the graphs
Temperature	Select if Temperature data will or will not be shown in the graphs
OffWrist	Select if computer calculated time where the device was not worn will or will not be shown in the graphs

Statistics

This page will calculate and show the daily analyses of sleep performance



The screenshot shows the ActStudio software interface. The top menu bar includes 'Control', 'Data', 'Analysis' (which is highlighted in blue), 'Generate Statistics', and 'Print Report'. Below the menu is a toolbar with icons for Control, Data, Analysis, Generate Statistics, and Print Report. The main window is titled 'ACTOGRAM' and displays a table of sleep data for the month of August 2014. The table has the following columns: Date, Bed Time, Get Up Time, Time in Bed (hours), Total Sleep Time (hours), Onset Latency (hours), Sleep Efficiency (Percent), WASO (minutes), and #Awak. The data shows various sleep patterns for each day, with the last entry on August 24th at 17:18:33.

Date	Bed Time	Get Up Time	Time in Bed (hours)	Total Sleep Time (hours)	Onset Latency (hours)	Sleep Efficiency (Percent)	WASO (minutes)	#Awak.
31/07/2014	00:11:52	07:05:52	06:54:00	06:51:00	00:02:00	0.992754	00:00:00	0
01/08/2014	04:41:52	-	07:18:08	07:18:08	00:00:00	1	00:00:00	0
02/08/2014	01:37:52	10:44:52	09:07:00	08:07:00	00:59:00	0.890311	00:00:00	0
03/08/2014	05:07:52	-	06:52:08	06:52:08	00:00:00	1	00:00:00	0
04/08/2014	03:16:52	10:32:52	07:16:00	06:47:00	00:27:00	0.933486	00:00:00	0
05/08/2014	19:53:52	-	16:06:08	16:06:08	00:00:00	1	00:00:00	0
06/08/2014	02:21:52	07:51:52	05:30:00	05:26:00	00:02:00	0.987879	00:00:00	0
07/08/2014	03:50:52	10:48:52	06:58:00	06:51:00	00:06:00	0.983254	00:00:00	0
08/08/2014	05:53:52	-	06:06:08	06:06:08	00:00:00	1	00:00:00	0
09/08/2014	05:22:52	10:12:52	04:50:00	04:11:00	00:38:00	0.865517	00:00:00	0
10/08/2014	02:22:52	09:43:52	07:21:00	06:43:00	00:00:00	0.913832	00:36:00	1
11/08/2014	04:46:52	10:30:52	05:44:00	05:43:00	00:00:00	0.997093	00:00:00	0
12/08/2014	03:58:52	09:32:52	05:34:00	05:30:00	00:02:00	0.988024	00:00:00	0
13/08/2014	03:21:52	10:34:52	07:13:00	07:13:00	00:00:00	1	00:00:00	0
14/08/2014	03:33:52	11:03:52	07:30:00	07:27:00	00:01:00	0.993333	00:00:00	0
15/08/2014	03:53:52	-	08:06:08	08:06:08	00:00:00	1	00:00:00	0
16/08/2014	03:41:52	10:37:52	06:56:00	05:08:00	00:05:00	0.740385	01:40:00	1
17/08/2014	02:35:52	10:53:52	08:18:00	07:37:00	00:40:00	0.917671	00:00:00	0
18/08/2014	04:47:52	-	07:12:08	07:12:08	00:00:00	1	00:00:00	0
19/08/2014	05:40:52	-	06:19:08	06:04:08	00:15:00	0.960436	00:00:00	0
20/08/2014	04:49:52	-	07:10:08	07:10:08	00:00:00	1	00:00:00	0
21/08/2014	09:20:52	-	02:39:08	02:39:08	00:00:00	1	00:00:00	0
22/08/2014	-	16:16:52	04:16:52	04:16:52	00:00:00	1	00:00:00	0
23/08/2014	04:18:52	-	07:41:08	07:18:08	00:23:00	0.950123	00:00:00	0
24/08/2014	17:18:33	12:00:00	18:41:27	00:00:00	00:00:00	0.950123	00:00:00	0

Report

Here it is possible to include wearer information's and doctor conclusions. All those informations will be included in the pdf report file

The screenshot shows the ActStudio software interface. The top menu bar includes 'Control', 'Data', 'Analysis' (which is currently selected), 'Generate Statistics', and 'Print Report'. The main window has tabs for 'ACTOGRAM', 'STATISTICS' (which is selected), and 'REPORT'. The 'REPORT' tab displays the following sections:

- SUBJECT INFORMATION:** Fields for Subject ID, Date of Birth (01/01/2000), Age, Gender (Male), and Recording Period (01/08/2014 00:00:52 - 24/08/2014 18:08:33).
- INDICATIONS FOR USE:** A large text area containing a single vertical bar character.
- SUMMARY STATISTICS:** A table showing sleep parameters:

	Bed Time	Get Up Time	Time in Bed (hours)	Total Sleep Time (hours)	Onset Latency (hours)	Sleep Efficiency (Percent)	WASO (minutes)	#Awak.
Min	17:18:33	12:00:00	02:39:08	02:39:08	00:01:00	0.740385	00:36:00	0
Max	09:20:52	11:03:52	18:41:27	16:06:08	00:59:00	1	01:40:00	1
Avg	14:17:11	09:10:08	07:30:23	06:46:48	00:18:20	1.00228	01:08:00	0.08
- INTERPRETATION:** A large text area for doctor conclusions.

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Making a Report

1. Extract or load the data to be analyzed.



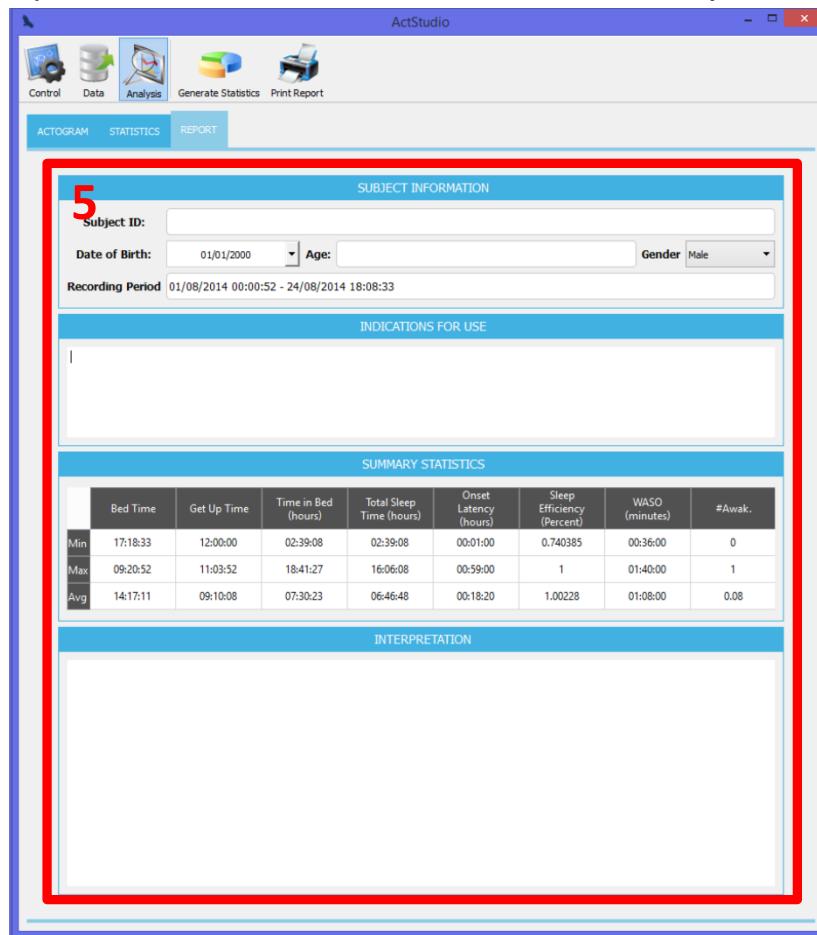
2. Go to the Actogram menu and verify the data.
3. If necessary, all the areas (off wrist, sleep, rest) can be edited and reassigned.
4. On the statistics menu the statistics can be checked

4	Bed Time	Get Up Time	Time in Bed (hours)	Total Sleep Time (hours)	Onset Latency (hours)	Sleep Efficiency (Percent)	WASO (minutes)	#Awak.
31/07/2014	00:11:52	07:05:52	06:54:00	06:51:00	00:02:00	0.992754	00:00:00	0
01/08/2014	04:41:52	-	07:18:08	07:18:08	00:00:00	1	00:00:00	0
02/08/2014	01:37:52	10:44:52	09:07:00	08:07:00	00:59:00	0.890311	00:00:00	0
03/08/2014	05:07:52	-	06:52:08	06:52:08	00:00:00	1	00:00:00	0
04/08/2014	03:16:52	10:32:52	07:16:00	06:47:00	00:27:00	0.933486	00:00:00	0
05/08/2014	19:53:52	-	16:06:08	16:06:08	00:00:00	1	00:00:00	0
06/08/2014	02:21:52	07:51:52	05:30:00	05:26:00	00:02:00	0.987879	00:00:00	0
07/08/2014	03:50:52	10:48:52	06:58:00	06:51:00	00:06:00	0.983254	00:00:00	0
08/08/2014	05:53:52	-	06:06:08	06:06:08	00:00:00	1	00:00:00	0
09/08/2014	05:22:52	10:12:52	04:50:00	04:11:00	00:38:00	0.865517	00:00:00	0
10/08/2014	02:22:52	09:43:52	07:21:00	06:43:00	00:00:00	0.913832	00:36:00	1
11/08/2014	04:46:52	10:30:52	05:44:00	05:43:00	00:00:00	0.997093	00:00:00	0
12/08/2014	03:58:52	09:32:52	05:34:00	05:30:00	00:02:00	0.988024	00:00:00	0
13/08/2014	03:21:52	10:34:52	07:13:00	07:13:00	00:00:00	1	00:00:00	0
14/08/2014	03:33:52	11:03:52	07:30:00	07:27:00	00:01:00	0.993333	00:00:00	0
15/08/2014	03:53:52	-	08:06:08	08:06:08	00:00:00	1	00:00:00	0
16/08/2014	03:41:52	10:37:52	06:56:00	05:08:00	00:05:00	0.740385	01:40:00	1
17/08/2014	02:39:52	10:53:52	08:18:00	07:37:00	00:40:00	0.917671	00:00:00	0
18/08/2014	04:47:52	-	07:12:08	07:12:08	00:00:00	1	00:00:00	0
19/08/2014	05:40:52	-	06:19:08	06:04:08	00:15:00	0.960436	00:00:00	0
20/08/2014	04:49:52	-	07:10:08	07:10:08	00:00:00	1	00:00:00	0
21/08/2014	09:20:52	-	02:39:08	02:39:08	00:00:00	1	00:00:00	0
22/08/2014	-	16:16:52	04:16:52	04:16:52	00:00:00	1	00:00:00	0
23/08/2014	04:18:52	-	07:41:08	07:18:08	00:23:00	0.950123	00:00:00	0
24/08/2014	17:18:33	12:00:00	18:41:27	00:00:00	00:00:00	0.950123	00:00:00	0

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5. On the report menu, insert all relevant data about the subject.



6. Click on the print report button and select the location where the report will be saved.



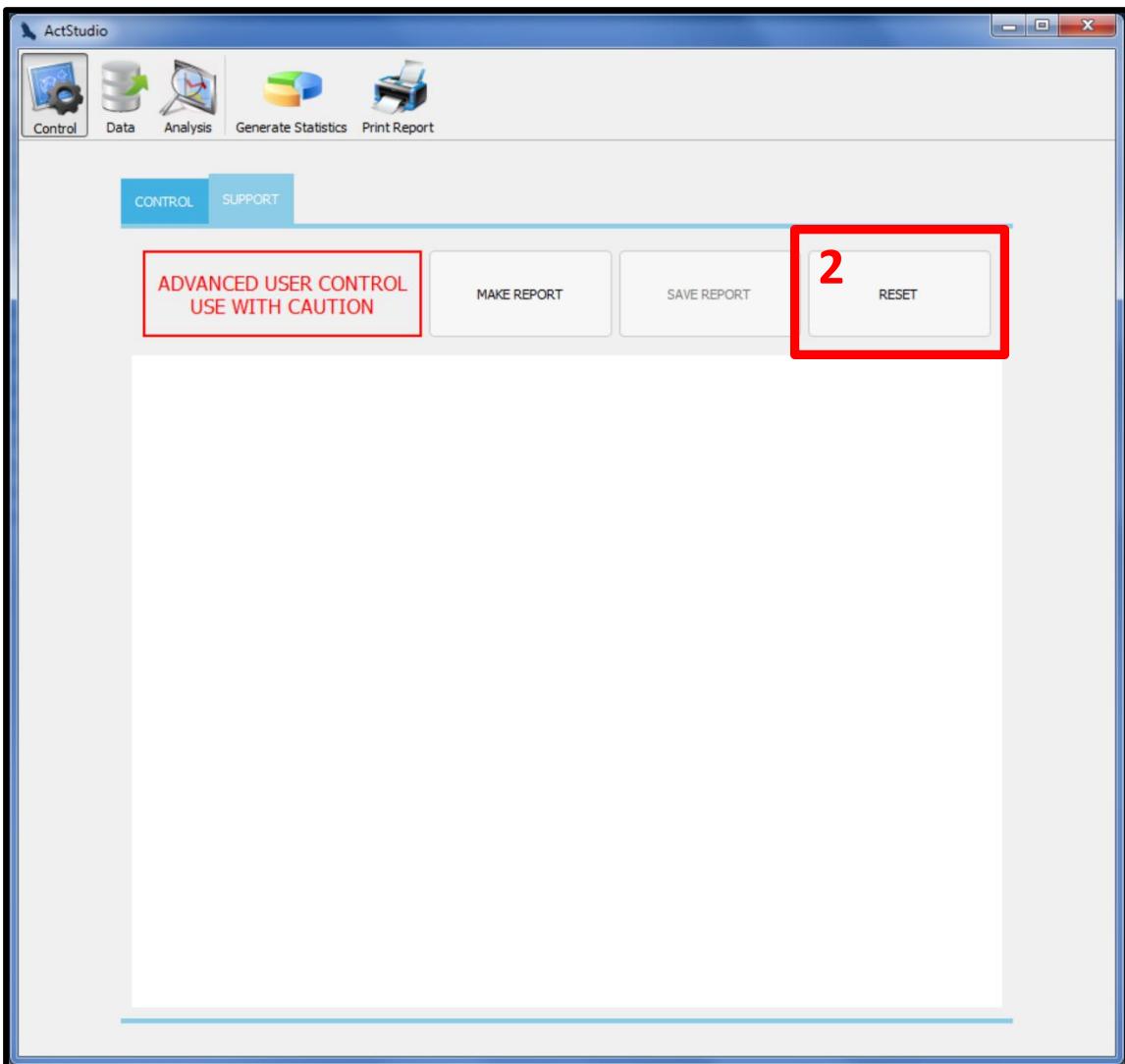
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Rebooting ActTrust



1. In the **Control** Menu, Navigate to the **Support** Menu.



2. Press the **RESET** button and wait.

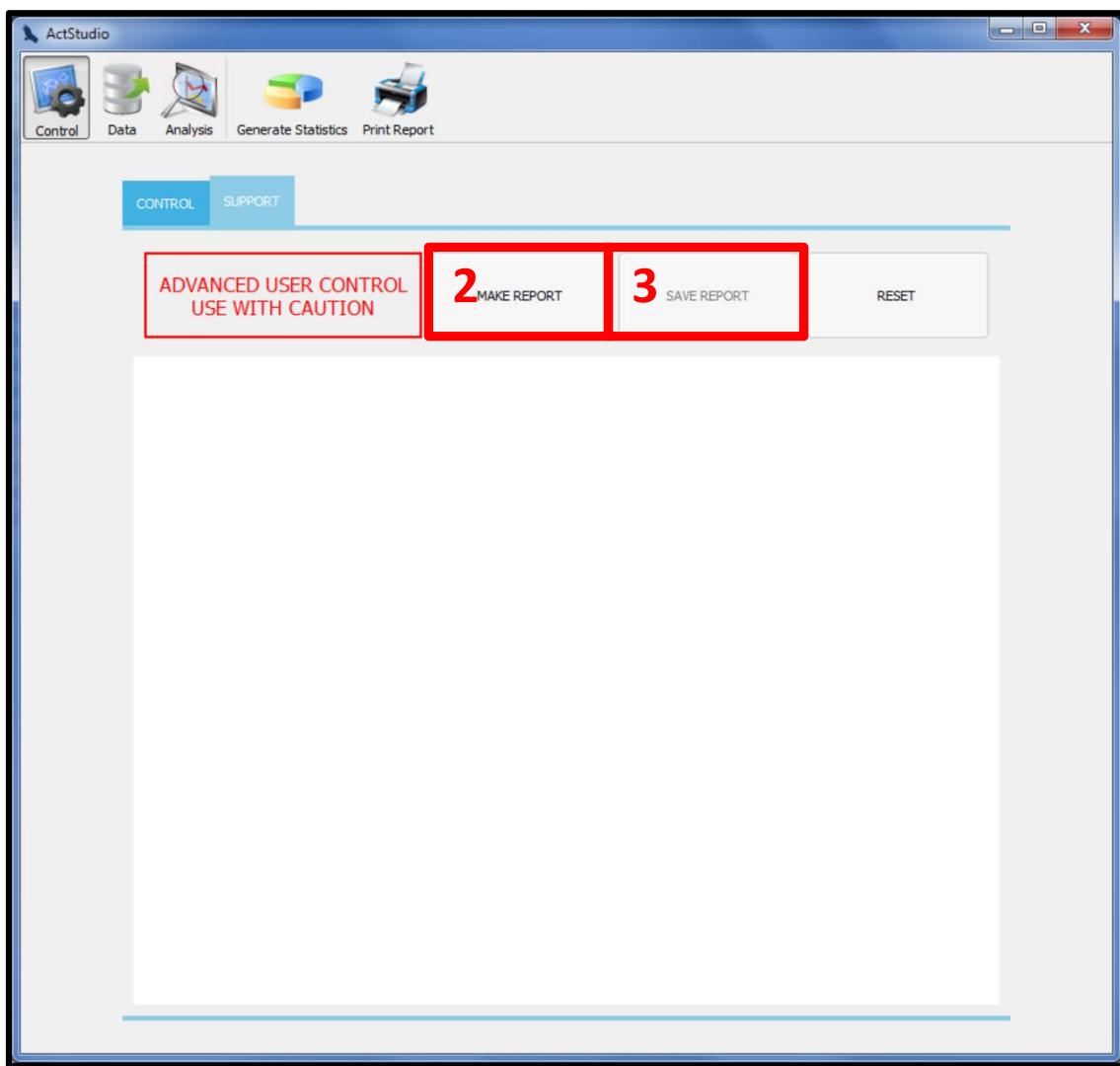
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Generating a Report of the ActTrust



3. Navigate to the **Support** Menu.



1. Press the **MAKE REPORT** button and wait for the report to be generated and displayed in the text box.
2. Press the **SAVE REPORT** button and select the file name and location where the report will be saved.

Troubleshooting

Most problems with the ActTrust can be resolved quickly following the guidelines in this chapter. If the problem persists, please contact Condor Instruments personnel to receive new guidelines.

My ActTrust is beeping every one minute

When the charge of the battery of your ActTrust device is very low, it starts beeping every minute to inform you that soon it will enter in storage mode to ensure that it will not operate at unreliable conditions. To solve this problem, recharge your ActTrust and it should stop beeping.

I push the events button, but I'm not hearing any beep

This can be caused mainly by two reasons. The first is due to a low battery charge of the ActTrust. The second is the possibility that the device is in power down mode. In both cases, connect your device to your computer using the dock interface. Wait at least 5 minutes and follow the procedure described in this manual to reset the device. Disconnect it from the dock and check if the problem persists.

When connecting the ActTrust on the computer a message appears on ActStudio software

The procedure will depend on the message itself.

If the message **"Device With Low Battery"** shows up, allow the battery to charge for a few minutes and follow the procedure described in this manual to reset the ActTrust.

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If the message "**Error With Device State**" show up, follow the procedure described in this manual to generate a report and save the document to a known location. After saving the report, try restarting the device. If the problem persists, please contact Condor Instruments personnel to receive new guidelines. If contacting by email, please attach the report generated by ActStudio.

The numbers that appear in ActStudio seems strange

This may be due to a problem initializing the device when the battery charge is too low. Connect the device at the ActDock, wait a few minutes to make sure the battery has a safe charge level and follow the procedure described in this manual to reset the ActTrust. If the problem persists, please contact Condor Instruments personnel.